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Security Council

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Note by the President of the Security Council

At its 6335th meeting, held on 9 June 2010 in connection with the item on non-proliferation, the Security Council adopted resolution 1929 (2010).

In paragraph 4 of the resolution, the Security Council requested the Director General of the International Atomic Energy Agency (IAEA) to communicate to the Security Council all his reports on the application of safeguards in the Islamic Republic of Iran.

Accordingly, the President herewith circulates the report dated 23 November 2010 from IAEA (see annex).

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Annex

Letter dated 23 November 2010 from the Director General of the International Atomic Energy Agency to the President of the Security Council

I enclose herewith the report requested by the Security Council in resolution 1929 (2010), which I have submitted today to the Board of Governors of the International Atomic Energy Agency (see enclosure).

I should be grateful if you would bring this letter and the enclosed report to the attention of all members of the Security Council.

(*Signed*) Yukiya **Amano**

Enclosure

GOV/2010/62
23 November 2010

Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran

Report by the Director General

1. This report of the Director General to the Board of Governors and, in parallel, to the Security Council, is on the implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran (Iran);[1] it includes developments since the last report was issued in September 2010.[2]

A. Enrichment Related Activities

2. Contrary to the relevant resolutions of the Board of Governors and the Security Council, Iran has not suspended its enrichment related activities.

A.1. Natanz: Fuel Enrichment Plant and Pilot Fuel Enrichment Plant

3. **Fuel Enrichment Plant (FEP):** There are two cascade halls at FEP: Production Hall A and Production Hall B. According to the design information submitted by Iran, eight units are planned for Production Hall A, with 18 cascades in each unit. No detailed design information has been provided for Production Hall B.

4. On 5 November 2010, 54 cascades had been installed in three of the eight units in Production Hall A, 29 of which were being fed with UF_6.[3,4] Initially, each installed cascade comprised 164 centrifuges. Iran recently modified six of the cascades to contain 174 centrifuges each. To date, all the centrifuges installed are IR-1 machines. Installation work in the remaining five units was ongoing but no centrifuges had been installed. As of 5 November 2010, there had been no installation work in Production Hall B.

5. Taking into account new information provided by Iran,[5] including a revised estimate of the hold-up of nuclear material, the Agency has now completed its evaluation of the nuclear material balance for the period 18 November 2008 to 22 November 2009, and has concluded that the results are within the measurement uncertainties normally associated with a facility of this type.

6. Between 16 and 27 October 2010, the Agency conducted a physical inventory verification (PIV) at FEP and verified that, as of 17 October 2010, 34 737 kg of natural UF_6 had been fed into the cascades since the start of operations in February 2007, and a total of 3135 kg of low enriched UF_6 had been produced. Based on Iran's

[1] The United Nations Security Council has adopted the following resolutions on Iran: 1696 (2006), 1737 (2006), 1747 (2007), 1803 (2008), 1835 (2008) and 1929 (2010).
[2] GOV/2010/46 (6 September 2010) (see S/2010/465).
[3] On 5 November 2010, the 54 installed cascades contained 8426 centrifuges. The 29 cascades being fed with UF_6 on that date contained a total of 4816 centrifuges, some of which were possibly not being fed with UF_6.
[4] On 16 November 2010, no cascades were being fed with UF_6. On 22 November 2010, Iran informed the Agency that 28 cascades were being fed with UF_6.
[5] GOV/2010/46, para. 5.

declaration, the Agency has calculated that the average U-235 enrichment level of the UF_6 product is 3.37%. The results of analysis of the samples taken by the Agency from the low enriched UF_6 product during the PIV are not yet available. The Agency is continuing with its overall assessment of the PIV.[6]

7. Iran has estimated that, between 18 October 2010 and 31 October 2010, it produced an additional 48 kg of low enriched UF_6, which would result in a total production of 3183 kg of low enriched UF_6 since February 2007. The nuclear material at FEP (including the feed, product and tails), as well as all installed cascades and the feed and withdrawal stations, are subject to Agency containment and surveillance.[7]

8. As of 16 June 2010, based on the results of the analysis of environmental samples taken at FEP since February 2007 and other verification activities, the Agency concluded that the facility has operated as declared by Iran in the Design Information Questionnaire (DIQ).

9. **Pilot Fuel Enrichment Plant (PFEP):** PFEP is a research and development (R&D) facility and a pilot, low enriched uranium (LEU) production facility which was first brought into operation in October 2003. It has a cascade hall that can accommodate six cascades. Cascades 1 and 6, each of which comprises 164 centrifuges, are designated for the production of LEU enriched up to 20% U-235. The other part of the cascade hall is designated as an "R&D area".

10. In the R&D area, between 21 August 2010 and 19 November 2010, a total of approximately 138 kg of natural UF_6 was fed into a 20-centrifuge IR-4 cascade, a 20-centrifuge IR-2m cascade and single IR-1, IR-2m and IR-4 centrifuges. In this area, no LEU is withdrawn because the product and the tails of this R&D activity are recombined at the end of the process.

11. In the production area, Iran began feeding low enriched UF_6 into Cascade 1 on 9 February 2010, for the stated purpose of producing UF_6 enriched up to 20% U-235 for use in the manufacture of fuel for the Tehran Research Reactor (TRR). Since 13 July 2010, Iran has been feeding low enriched UF_6 into the two interconnected cascades (Cascades 1 and 6).[8]

12. Between 18 and 29 September 2010, the Agency conducted a PIV at PFEP and verified that, as of 18 September 2010, 352 kg of low enriched UF_6 had been fed into the cascade(s) since 9 February 2010, and that a total of 25.1 kg of UF_6 enriched up to 20% U-235 had been produced. Iran declared that the enrichment level of the UF_6 product was 19.89%. The Agency is continuing with its assessment of the PIV.[9]

13. Iran has estimated that, between 19 September 2010 and 19 November 2010, a total of 62.5 kg of UF_6 enriched at FEP was fed into the two interconnected cascades and that approximately 7.8 kg of UF_6 enriched up to 20% U-235 was produced. This would result in a total of approximately 33 kg of UF_6 enriched up to 20% U-235 having been produced since the process began in February 2010.

14. As of 12 July 2010, based on the results of the analysis of the environmental samples taken at PFEP and other verification activities, the Agency concluded that the facility has operated as declared by Iran in the DIQ.

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[6] GOV/2010/46, para. 6.

[7] In line with normal safeguards practice, small amounts of nuclear material at the facility (e.g. some waste and samples) are not under containment and surveillance.

[8] GOV/2010/28, para. 9.

[9] Non-destructive assay measurements by the Agency of the UF_6 product indicated an enrichment of 19.94% U-235. The results of destructive analysis of the UF_6 product samples are not yet available.

A.2. Qom: Fordow Fuel Enrichment Plant

15. In September 2009, Iran informed the Agency that it was constructing the Fordow Fuel Enrichment Plant (FFEP), located near the city of Qom. In its DIQ of 10 October 2009, Iran stated that the purpose of the facility was the production of UF_6 enriched up to 5.0% U-235, and that the facility was being built to contain 16 cascades, with a total of approximately 3000 centrifuges.[10]

16. In a letter dated 26 September 2010, Iran provided the Agency with a revised DIQ in which Iran stated that the purpose of FFEP was now to include R&D as well as the production of UF_6 enriched up to 5.0% U-235. The lay-out of the facility is being changed to a new configuration consisting of 12 cascades for production purposes and four cascades for R&D purposes. In a letter dated 10 November 2010, the Agency provided Iran with comments on the DIQ and requested further clarification of the new purpose and configuration of FFEP.

17. As previously reported, in Iran's initial declaration regarding the purpose of FFEP, contained in a letter dated 2 December 2009, Iran stated that, "The location [near Qom] originally was considered as a general area for passive defence contingency shelters for various utilizations. Then this location was selected for the construction of [the] Fuel Enrichment Plant in the second half of 2007".[11] The Agency has asked Iran on a number of occasions, most recently in the aforementioned letter of 10 November 2010, to provide additional information regarding the chronology of the design and construction of FFEP, as well as its original purpose.[12] The Agency has, on several occasions, also requested access to companies involved in the design and construction of FFEP. The Agency informed Iran that it had received extensive information from a number of sources alleging that design work on the facility had started in 2006.[13] Iran has stated that there are "no legal bases" upon which the Agency can request information on the chronology and purpose of FFEP, and that the Agency is "not mandated to raise any question beyond the Safeguards Agreement".[14] In a letter of 16 November 2010, Iran said that its statements concerning the chronology and purpose of FFEP should be considered "as a fact" by the Agency, and that the Agency's request to have access to companies involved in the design of the facility and to further design documents was not only not in accordance with the Safeguards Agreement but was also "beyond the Additional Protocol". The Agency considers that the questions it has raised are within the terms of the Safeguards Agreement, and that the information requested is essential for the Agency to verify the chronology and original purpose of FFEP to ensure that the declarations of Iran are correct and complete.[15]

18. The Agency has verified that the construction of the facility is ongoing. As of 14 November 2010, no centrifuges had been introduced into the facility. The results of the environmental samples taken at FFEP up to February 2010 did not indicate the presence of enriched uranium.[16]

A.3. Other Enrichment Related Activities

19. The Agency is still awaiting a substantive response from Iran to Agency requests for further information in relation to announcements made by Iran concerning the construction of ten new uranium enrichment facilities, the sites for five of which, according to Iran, have been decided, and the construction of one of which

[10] GOV/2009/74, para. 9.
[11] GOV/2010/10, para. 15.
[12] GOV/2010/10, paras. 14–16.
[13] GOV/2010/10, para. 15.
[14] INFCIRC/797, para. 4.
[15] GOV/2010/10, para. 14.
[16] The results did show a small number of particles of depleted uranium (see GOV/2010/10, para. 17).

will begin by the end of the current Iranian year (20 March 2011) or the start of the next year.[17,18] Iran has not provided further information, as requested by the Agency, in connection with its announcement on 7 February 2010 that it possessed laser enrichment technology,[19] and its announcement on 9 April 2010 regarding the development of third generation centrifuges.[20]

B. Reprocessing Activities

20. In a letter to the Agency dated 15 February 2008, Iran stated that it "does not have reprocessing activities". In that context, the Agency has continued to monitor the use of hot cells at TRR[21] and the Molybdenum, Iodine and Xenon Radioisotope Production (MIX) Facility.[22] The Agency carried out an inspection and design information verification (DIV) at TRR on 6 November 2010 and a DIV at the MIX Facility on 7 November 2010. With regard to the requirement in Security Council resolutions that Iran suspends its reprocessing activities, the Agency can confirm that there are no ongoing reprocessing related activities in Iran only with respect to the TRR and MIX facilities, and all other facilities to which the Agency has access, as Iran's Additional Protocol is not being implemented.

C. Heavy Water Related Projects

21. The Agency has been mandated by the Security Council to report to it on whether Iran has established full and sustained suspension of, inter alia, all heavy water related projects.[23] As indicated in the Director General's previous reports, the Agency has requested that Iran make the necessary arrangements to provide the Agency, at the earliest possible date, with access to: the Heavy Water Production Plant (HWPP); the heavy water stored at the Uranium Conversion Facility (UCF) for the taking of samples;[24] and any other location in Iran where projects related to heavy water are being carried out. The Agency, in a letter to Iran dated 2 November 2010, has again reiterated this request for access. In its reply dated 7 November 2010, Iran repeated its previous assertions that the Agency's requests had "no legal basis since they are not falling within Iran's Safeguards Agreement" and that the Agency's requests went beyond the relevant Security Council resolutions that "request only verification of suspension". Iran also stated that it had not suspended work on heavy water related projects. To date, Iran has not provided the requested access.

22. On 8 November 2010, the Agency carried out a DIV at the IR-40 reactor at Arak and observed no significant change since the Director General's last report. The Agency verified that construction of the facility was ongoing, with the civil construction of the buildings almost complete and some major equipment having been installed. This equipment includes the main crane in the reactor building and the pressurizer for the reactor cooling system. According to Iran, the operation of the IR-40 reactor is planned to commence in 2013. In the radiochemistry building, the concrete structure for the hot cells was ready, but no hot cell windows or manipulators were present.

[17] "Iran Specifies Location for 10 New Enrichment Sites", Fars News Agency, 16 August 2010.
[18] GOV/2010/46, para. 33.
[19] Cited on the website of the Presidency of the Islamic Republic of Iran, 7 February 2010, at http://www.president.ir/en/?ArtID=20255.
[20] GOV/2010/28, para. 18.
[21] TRR is a 5 MW reactor which operates with 20% U-235 enriched fuel and is used for the irradiation of different types of targets and for research and training purposes.
[22] The MIX Facility is a hot cell complex for the separation of radiopharmaceutical isotopes from targets, including uranium, irradiated at TRR. The MIX Facility is not currently processing any uranium targets.
[23] S/RES/1737 (2006), para. 23, S/RES/1747 (2007), para. 12, S/RES/1803 (2008), para. 18, and S/RES/1929 (2010), para. 36.
[24] GOV/2010/10, paras. 20 and 21.

23. Based on satellite imagery, the HWPP appears to be in operation.[25] However, without access to the HWPP, the Agency is unable to verify Iran's statement that it has not suspended work on heavy water related projects, contrary to relevant Security Council resolutions,[26] and therefore cannot report fully on this matter.

D. Uranium Conversion and Fuel Fabrication

24. On 10 November 2010, the Agency carried out a DIV at UCF. At that time, the plant was still undergoing maintenance. As no UF_6 has been produced at UCF since 10 August 2009, the total amount produced at UCF since March 2004 remains 371 tonnes (some of which has been transferred to FEP and PFEP), and remains subject to Agency containment and surveillance. During the DIV, the Agency observed that Iran had not yet begun the installation of equipment for the conversion of the UF_6 enriched up to 20% U-235 into U_3O_8, which would be required for the fabrication of fuel for TRR.[27]

25. On 9 November 2010, the Agency carried out an inspection and a DIV at the Fuel Manufacturing Plant and confirmed that Iran has not yet started to install equipment for TRR fuel fabrication.[28]

E. Other Activities

26. Iran provided a DIQ for the Bushehr Nuclear Power Plant (BNPP) in May 2000; the Agency has been conducting design verification at BNPP regularly since November 2000. On 26 November 2007, prior to the shipment of the fresh fuel for BNPP from the Russian Federation to Iran, the Agency verified and sealed the fuel.

27. In a letter dated 17 October 2010, Iran informed the Agency that it would commence the loading of fresh fuel into the reactor core on 25 October 2010. On 27 October 2010, the Agency confirmed that Iran had begun doing so. On 12 November 2010, the Agency confirmed that the core loading at BNPP had been completed and verified all fuel assemblies in the core. Containment and surveillance measures were put in place in order to maintain continuity of knowledge until the core is closed and sealed. The operational schedule of BNPP is not yet available to the Agency.

28. The Jabr Ibn Hayan Multipurpose Research Laboratory (JHL) is located at the Tehran Nuclear Research Centre and is a nuclear and non-nuclear chemistry research laboratory. On 7 November 2010, the Agency conducted a DIV at JHL, during which it confirmed that no experimental activities aimed at "studying the electrochemical behaviour of uranyl ion in ionic liquid" were taking place.[29]

29. Based on satellite imagery, the Agency assesses that activities involving the mining and concentration of uranium are continuing in the area of the Bandar Abbas Uranium Production Plant, and that construction activities are continuing at the Ardakan Yellowcake Production Plant and at the Saghand Uranium Mine.

F. Design Information

30. As explained in previous reports of the Director General, the modified Code 3.1 of the Subsidiary Arrangements General Part to Iran's Safeguards Agreement, as agreed to by Iran in 2003, remains in force.

[25] As previously indicated to the Board, in light of Iran's refusal to permit the Agency access to the HWPP, the Agency has had to rely solely on satellite imagery.
[26] S/RES/1737 (2006), para. 2(a), S/RES/1747 (2007), para. 1, S/RES/1803 (2008), para. 1, S/RES/1835 (2009), para. 1, and S/RES/1929 (2010), para. 6.
[27] GOV/2010/46, para. 25.
[28] GOV/2010/46, para. 26.
[29] GOV/2010/46, para. 28.

notwithstanding Iran's decision in 2007 to suspend its implementation.[30] Iran remains the only State with significant nuclear activities which has a comprehensive safeguards agreement in force that is not implementing the provisions of the modified Code 3.1. The Agency is still awaiting receipt from Iran of, inter alia, updated design information for the IR-40 reactor, and further information pursuant to statements it has made concerning the planned construction of new uranium enrichment facilities and the design of a reactor similar to TRR.[31]

G. Designation of Inspectors

31. As stated in the Director General's previous report, while acknowledging Iran's acceptance of the designation of five new inspectors (in letters from Iran to the Agency dated 14 April 2010 and 16 August 2010),[32] the Agency continues to request Iran to withdraw its objection to the designation of inspectors with experience in Iran's nuclear fuel cycle and facilities. In that respect, the Agency reiterates its request that Iran reconsider its decision of 16 January 2007 to request the Agency to withdraw the designation of 38 Agency inspectors and its requests (dating back to 2006) to withdraw the designations of four other inspectors with experience in conducting inspections in Iran.

H. Possible Military Dimensions

32. Previous reports by the Director General have detailed the outstanding issues related to possible military dimensions to Iran's nuclear programme and the actions required of Iran necessary to resolve those issues.[33] Since August 2008, however, Iran has declined to discuss the outstanding issues with the Agency or to provide any further information or access to locations and people necessary to address the Agency's concerns, asserting that the allegations relating to possible military dimensions to its nuclear programme are baseless and that the information to which the Agency is referring is based on forged documents.

33. Based on the Agency's analysis of all the information available to it, the Agency remains concerned about the possible existence in Iran of past or current undisclosed nuclear related activities involving military related organizations, including activities related to the development of a nuclear payload for a missile. There are indications that certain of these activities may have continued beyond 2004.[34]

34. As Iran has been informed previously, although most of the actions identified in the 2007 work plan agreed between Iran and the Agency (INFCIRC/711) have been completed, there remain issues that still need to be addressed.[35] According to the work plan, Iran was required to provide the Agency with its assessment of the documentation related to the alleged studies to which the Agency had provided Iran access. The Agency acknowledges receipt of Iran's 117-page assessment of May 2008, in which Iran asserted that the documentation was forged and fabricated. However, as the Agency considers this assessment to be focused on form rather than substance, it has on several subsequent occasions requested Iran to provide a substantive response. Iran has not yet done so. Moreover, based on the Agency's analysis of additional information which has come to its attention since August 2008,[36] there are further concerns which the Agency also needs to clarify with Iran. For these reasons the Agency is unable to consider the issue of the alleged studies as referred to in the work plan as being closed.

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[30] GOV/2010/10, paras. 28–30.
[31] GOV/2010/46, para. 32.
[32] GOV/2010/46, para. 37.
[33] GOV/2010/10, paras. 40–43.
[34] GOV/2010/46, para. 39.
[35] These were set out again in the letter to Iran dated 29 October 2010 referred to in paragraph 35.
[36] GOV/2010/10, para. 43.

35. In a letter dated 29 October 2010, the Agency provided Iran with a list of matters that remain to be addressed, including, inter alia: the project management structure of the alleged studies related to nuclear explosives; nuclear related safety arrangements for a number of the alleged projects; details of the manufacture of components for high explosives initiation systems; and experiments concerning the generation and detection of neutrons. As was pointed out to Iran in that letter, it is important to resolve all of the issues which have given rise to concerns about the possible military dimensions of Iran's nuclear programme.

36. It is essential that Iran engage with the Agency on these issues, and that the Agency be permitted to visit all relevant sites, have access to all relevant equipment and documentation, and be allowed to interview all relevant persons, without further delay. The passage of time and the possible deterioration in the availability of some relevant information increase the urgency of this matter. Iran's substantive and proactive engagement is essential to enable the Agency to make progress in its verification of the correctness and completeness of Iran's declarations.

I. Summary

37. While the Agency continues to verify the non-diversion of declared nuclear material in Iran, Iran has not provided the necessary cooperation to permit the Agency to confirm that all nuclear material in Iran is in peaceful activities.[37]

38. More specifically, Iran is not implementing the requirements contained in the relevant resolutions of the Board of Governors and the Security Council, including implementation of the Additional Protocol, which are essential to building confidence in the exclusively peaceful purpose of Iran's nuclear programme and to resolving outstanding questions. In particular, Iran needs to cooperate in clarifying outstanding issues which give rise to concerns about possible military dimensions to its nuclear programme, including by providing access to all sites, equipment, persons and documents requested by the Agency. Iran also needs to implement the modified Code 3.1 on the early provision of design information. The Agency acknowledges Iran's submission of a revised DIQ for FEEP and its advance notification to the Agency of the loading of fuel at the Bushehr Nuclear Power Plant.

39. In addition, contrary to the relevant resolutions of the Board of Governors and the Security Council, Iran has not suspended its enrichment related activities. Iran has continued with the operation of FEP and PFEP at Natanz, and has continued to produce UF_6 enriched up to 20% U-235 at PFEP. Iran has continued the construction of FFEP. In order to verify the chronology and original purpose of FFEP, Iran still needs to provide the Agency with access to relevant design documents and to companies involved in the design and construction of the plant. Iran has also announced that it has selected the venues for new enrichment facilities and that construction of one of these facilities will start around March 2011, but has not provided the Agency with the necessary design information and access in accordance with Iran's Safeguards Agreement and Subsidiary Arrangements.

40. Similarly, contrary to the relevant resolutions of the Board of Governors and the Security Council, Iran has also continued with the construction of the IR-40 reactor and with heavy water related activities. The Agency has not been permitted to take samples of the heavy water which is stored at UCF, and has not been provided with access to the HWPP. While the Agency can report that Iran has made statements to the effect

[37] The Board has confirmed on numerous occasions, since as early as 1992, that paragraph 2 of INFCIRC/153 (Corr.), which corresponds to Article 2 of Iran's Safeguards Agreement, authorizes and requires the Agency to seek to verify both the non-diversion of nuclear material from declared activities (i.e. correctness) and the absence of undeclared nuclear activities in the State (i.e. completeness) (see, for example, GOV/OR.864, para. 49). Paragraph 37 reflects the past and current implementation by Iran of its Safeguards Agreement and other obligations.

that it has not suspended those activities, without full access to the heavy water at UCF and the HWPP, the Agency is unable to verify such statements and therefore to report fully on this matter.

41. The Director General requests Iran to take steps towards the full implementation of its Safeguards Agreement and its other obligations, including implementation of its Additional Protocol.

42. The Director General will continue to report as appropriate.